



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,102	03/31/2004	Edward K. Y. Jung	0104-003-004-000000	9902
80118	7590	02/13/2009		
Constellation Law Group, PLLC P.O. Box 220 Tracyton, WA 98393			EXAMINER SURVILLO, OLEG	
			ART UNIT 2442	PAPER NUMBER
			MAIL DATE 02/13/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/816,102	Applicant(s) JUNG ET AL.	
	Examiner OLEG SURVILLO	Art Unit 2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission dated November 26, 2008 has been entered.

Response to Amendment

2. Claims 1-29 remain pending in the application. Claims 1, 4-6, 10, 11, 13-18, 22-26, and 28 are currently amended. No claims have been canceled. No new claims have been added.

It is noted that at pages 53-54 of remarks under the heading: Conclusion it is acknowledged that: "*Applicant may have during the course of prosecution cancelled and/or amended one or more claims ...*". Several submissions pertaining to canceled claims were presented under the same section of remarks. Applicant's uncertainty regarding the status of all claims is not understood. Applicant is therefore requested to verify whether or not any claims were in fact canceled during the course of prosecution because examiner fails to see that any claims were canceled in the amendment dated October 27, 2008.

Response to Arguments

3. With regard to the applicant's remarks dated October 27, 2008:

it is noted that applicant's arguments regarding objections and rejections made in the Office action mailed May 27, 2008 are addressed in the same order as made in the last Office action.

Regarding objection to an abstract, applicant's amendment to the abstract of the disclosure has been fully considered and is sufficient. Therefore, the objection has been withdrawn.

Regarding objection to the specification as containing disclosure entirely outside the bounds of the claims, applicants' arguments have been fully considered. In particular, applicants requested "this objection to be held in abeyance until the prosecution of the claims has determined the extent of the allowable subject matter", pursuant to 37 CFR 1.111(b). Applicants' request is granted. However, Applicants are strongly encouraged to comply with the requirements of MPEP section 1302.01 early during the course of prosecution of the above-identified application unless they intend to incorporate the subject matter of all co-pending applications into the presently claimed invention prior to allowance of this case.

Regarding objection to claims 4, 6, 10, and 11 for minor informalities, applicants' amendment has been fully considered and is sufficient. Therefore, the objection has been withdrawn.

Regarding the rejection of claims 13-24 under 35 U.S.C. 101, applicants' arguments have been fully considered. Applicants argued that "*claim 13 has been*

amended to no longer recite a means plus function claim rendering the office's rejection moot". This argument is persuasive. Thus, the rejection has been withdrawn. It is noted that citation of *In re Alappat* case law by applicants is irrelevant in view of the amendment to claim 13. Therefore, applicants' argument pertaining to *In re Alappat* case law is not addressed herein.

Regarding the rejection of claims 13-24 under 35 U.S.C. 112, first paragraph, applicants' amended claim 13 to delete "means" recitations and submitted that "*claim 13 is not to be interpreted to invoke 35 U.S.C. 112, sixth paragraph and the rejection is moot*". Thus, the rejection has been withdrawn.

Regarding the rejection of claims 25 and 28 under 35 U.S.C. 112, second paragraph, applicants' arguments and amendments have been fully considered and are sufficient. Therefore, the rejection has been withdrawn.

Regarding the rejection of claims 1, 3-10, 13, and 15-22 under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of Madden et al., applicants' arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained.

As to claim 1, applicants argued that the Office action fails to state a prima facie case of obviousness because the cited prior art (Mulgund et al. and Madden et al.) fail to identify the same elements as in claim 1. In particular, applicants asserted that Mulgund does not show verbatim the language of the claim. Examiner disagrees because in order to for examiner to establish a prima facie case of obviousness of an applicants' claim, examiner must interpret the claim. If it could be shown that the cited

Art Unit: 2442

prior art discloses the claimed limitations in exactly the same words, no claim interpretation would be necessary. Therefore, Office action is not required to identify a reference that would repeat claim language verbatim.

As to claim 1, applicants further argued that: *“the Examiner-identified portions of Mulgund and Madden Ref. 1 do not recite the text of clause [a] as recited in Independent claim 1”*. Examiner disagrees for the same reasons as discussed above, wherein the quoted material from Mulgund et al. and/or Madden et al. is not required to repeat the claim language word for word, as claimed limitations are a subject to interpretation, such interpretation being as broad as the claim terms would reasonably allow, in light of the specification, when read by one skilled in the art with which the claimed invention is most closely connected. To that extent, one of ordinary skill in the art at the time of the invention would have interpreted transmitting with a second mote ... content indexes of a first set of motes as including process of transmitting with a child a sensor reading that includes sensor attributes, such as group id. See Madden at section 4.2 and Figure 2.

In response to the argument that *“the examiner has provided no objectively verifiable evidence, or argument based on objectively verifiable evidence, as to why the text of the reference passages should be interpreted to teach clause [a] of amended independent claim 1”* applicants are requested to provide statutes, regulations, or sections of the MPEP that would require examiner to provide objectively verifiable evidence, or argument based on objectively verifiable evidence, as to why the text of the applied reference passages should be interpreted to teach clause [a] of the claim 1.

Art Unit: 2442

Examiner maintains that a prima facie case of obviousness of an applicant's claim has been established since examiner first interpreted the claim, then defined one or more prior art reference components relevant to the claim at issue, ascertained the differences between the one or more prior art reference components and the elements of the claim at issue, and thereafter provided adduce objective evidence which establishes, under a preponderance of the evidence standard, a teaching to modify the teachings of the prior art reference components such that the prior art reference components can be used to construct a device substantially equivalent to the claim at issue.

In response to the argument that *"the examiner is relying on "personal knowledge" and/or is taking "official notice" of one or more factors to reach the factual conclusion of what the cited technical material "teaches"'*", it is noted that each and every element as set forth in the claim is found, either expressly or inherently described, in a plurality prior art references. Therefore, taking official notice of facts not in the record or relying on "common knowledge" in making a rejection by the examiner is not appropriate and was not taken/relied on. Thus, applicants' reliance on MPEP section 2144.03(c) is misplaced.

As to claims 2-29, applicants presented analogous arguments as discussed just above that do not arise a need to be addressed separately. Examiner disagrees for the same reasons, which are not repeated for brevity.

Furthermore, as to claim 5, applicants argued that *"the cited text does not show or recite "the mote-addressed content indexes of the first set of motes comprises*

memory addresses of content stored in a memory in the first set of notes””. In response to this argument applicants are requested to point out where the specification shows or recites this limitation. In response to applicants' argument that “*Examiner’s unpatentability analysis fails to adequately satisfy the Examiner’s burden with respect to portions (3) and (4) of said analysis*”, it is noted that examiner’s burden has been satisfied since portions (3) and (4) of the analysis were explicitly performed with respect to independent claim 1, wherein claim 5 is rejected under the same grounds.

As to any arguments not specifically addressed, they are the same as those discussed above.

Specification

4. The application contains disclosure entirely outside the bounds of the claims.

Applicant is required to modify the brief summary of the invention and restrict the descriptive matter so as to be in harmony with the claims (MPEP § 1302.01).

In particular, it appears that only disclosure of section IV. TRANSMISSION OF AGGREGATED MOTE-ASSOCIATED INDEX DATA (pages 18-25 of the specification) is relevant to the subject matter of claims 1-29, as presently claimed. The rest of the specification describes the subject matter of the co-pending applications wherein the name of each section in the specification corresponds to the name of each of the co-pending applications. Applicants are reminded that the subject matter of the earlier and later sections of the specification (sections I, II, III, and V.) is actually included through their incorporation by reference of the related/parent applications, as mentioned in the

beginning of the specification (pages 1-4). As a result, providing a detailed description of the subject matter of co-pending applications is redundant and must be removed from the current application.

This objection was requested by applicants to be held in abeyance until allowable subject matter is indicated, pursuant to 37 CFR 1.111(b), in response dated November 26, 2008.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 5 and 13-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in full, clear, concise, and exact terms.

In particular, the amended claim 5 recites in part *"the mote-addressed content indexes of the first set of motes comprises memory addresses of content stored in a memory in the first set of motes"* (emphasis added). The specification fails to describe in full, clear, concise, and exact terms this newly added limitation or even provide an antecedent basis for "memory addresses of content".

The amended claim 13 recites "a transmitter controlled by a second mote". The specification provides a clear antecedent basis for the limitation of a "transmitter" at page 7 reciting "light transmitters", "electrical/magnetic transmitters", "pressure

Art Unit: 2442

transmitters", "temperature transmitters", "volume transmitters", and "inertial transmitters". However, there is no explicit description or even suggestion that one or more of light, electrical/magnetic, pressure, temperature, volume, and inertial transmitters is/are to transmit at least a part of an aggregate of one or more mote-addressed content indexes of a first set of motes, wherein the first set of motes excludes the second mote. Just because the specification mentions a "transmitter" does not inherently mean that the specification provides a support for such a transmitter to perform the claimed functionality that was previously claimed to be performed by "means" recitation. Applicants are requested to cite relevant sections of the specification, if such can be found, in support of the "transmitter" recited at page 7 performing claimed functionality.

7. Claims 14-24 recite additional means and a reporting entity as comprising the transmitter of claim 13. However, claimed means and a reporting entity is nowhere described in the specification in full, clear, concise, and exact terms to be a part of the transmitter recited at page 7. Therefore, claims 14-24 are rejected for the same reasons.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 7-9 recite the limitation "said effecting the transmitting". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 3-10, 13, and 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. (US 2002/0161751 A1) in view of "TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks" by Samuel Madden et al.

As to claim 1, Mulgund shows:

transmitting at least a part of one or more mote-addressed content indexes of a first set of motes [retrieving the information stored at the node] (par. [0025] and [0062]), wherein in the first set of motes excludes the second mote [set of parent nodes 2 excludes a child node 2] (Fig. 1). It is noted that the terms "node" and "mote" are interpreted to have the same meaning of small embedded platform that has one or more sensors (par. [0026]) and therefore these terms are used here interchangeably.

Mulgund does not explicitly show that transmitting is with a second mote and that at least a part of an aggregate of one or more mote-addressed content indexes is transmitted (emphasis added).

Madden shows transmitting with a second mote [child node] at least a part of an aggregate of one or more mote-addressed content indexes [sensor attributes, such as group id] of a first set of motes [a collection phase, where the aggregate value are continually routed up from children to parents], wherein in the first set of motes excludes

Art Unit: 2442

the second mote [set of parent nodes excludes a child node] (abstract, section 1.1 par. 2, section 4, 4.1 pars. 1-2, and 4.2; Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by transmitting with a second mote at least a part of an aggregate of one of more mote-addressed content indexes in order to lower the number of message transmissions, latency, and power consumption than the server-based approach (as taught by Mulgund) (Madden, section 4 under In-Network Aggregates).

As to claim 3, Mulgund in view of Madden shows transmitting at least a part of a mote-addressed routing/spatial index (section 2.1, paragraphs 2 and 3, Madden).

As to claim 4, Mulgund in view of Madden shows transmitting part of the aggregate of one or more mote-addressed content indexes of the first set of motes to a reporting entity [TinyOS, the mote operating system of the parent node receiving the transmitted aggregate] (section 1 Introduction, paragraph 1, Madden).

As to claim 5, Mulgund in view of Madden shows obtaining access to the one or more mote-addressed content indexes of the first set of motes [parent node obtaining a message from a child node, message containing one or more mote-addressed content indexes] (section 2.1, last paragraph, Madden), wherein the mote-addressed content indexes of the first set of motes comprises memory addresses of content [attributes of

Art Unit: 2442

the sensor data] stored in a memory in the first set of motes [knowledge base] (par. [0026] in Mulgund).

As to claim 6, Mulgund in view of Madden shows transmitting part of the aggregate of one or more mote-addressed content indexes of the first set of motes in response to a schedule (Madden, section 4.1, paragraphs 2 and 3).

As to claim 7, Mulgund in view of Madden shows receiving the schedule (Madden, section 4.1, paragraphs 2 and 3).

As to claim 8, Mulgund in view of Madden shows deriving the schedule (Madden, section 4.1, paragraphs 2 and 3).

As to claim 9, Mulgund in view of Madden shows deriving the schedule at least in part from at least one of an optimized query or a stored query (Madden, section 4.1, paragraphs 2 and 3).

As to claim 10, Mulgund in view of Madden shows transmitting part of the aggregate of one or more mote-addressed content indexes of the first set of motes in response to a query (Madden, abstract, section 1.1 the TAG Approach).

As to claim 13, Mulgund shows:

transmitting at least a part of one or more mote-addressed content indexes of a first set of motes [retrieving the information stored at the node] (par. [0025] and [0062]), wherein in the first set of motes excludes the second mote [set of parent nodes 2 excludes a child node 2] (Fig. 1). It is noted that the terms “node” and “mote” are interpreted to have the same meaning of small embedded platform that has one or more sensors (par. [0026]) and therefore these terms are used here interchangeably.

Mulgund does not explicitly show a transmitter controlled by a second mote and that at least a part of an aggregate of one or more mote-addressed content indexes is transmitted (emphasis added).

Madden shows a transmitter controlled by a second mote [child node's RFM radio device] to transmit at least a part of an aggregate of one or more mote-addressed content indexes [sensor attributes, such as group id] of a first set of motes [a collection phase, where the aggregate value are continually routed up from children to parents], wherein in the first set of motes excludes the second mote [set of parent nodes excludes a child node] (abstract, section 1.1 par. 2, section 4, 4.1 pars. 1-2, and 4.2; Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by having a transmitter controlled by a second mote to transmit at least a part of an aggregate of one of more mote-addressed content indexes in order to lower the number of message transmissions, latency, and power consumption than the server-based approach (as taught by Mulgund) (Madden, section 4 under In-Network Aggregates).

As to claims 15-22, Mulgund in view of Madden shows all the elements, as discussed above with respect to corresponding method claims 3-10.

12. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of “TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks” by Samuel Madden et al (hereinafter *Madden Ref. 1*) and in further view of “The Design of an Acquisitional Query Processor For Sensor Networks” by Samuel Madden et al. (hereinafter *Madden Ref. 2*).

As to claim 2, Mulgund in view of Madden Ref. 1 shows all the elements except for sensing index being transmitted [sensors route data back towards the user through a routing tree rooted at the basestation] (section 1.1 paragraph 2, Madden Ref. 1).

Madden Ref. 2 shows at least one of a mote-addressed sensing index [a sensor table of sensors’ readings and types of sensors] (section 3.1 Basic Language Features).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund in view of Madden Ref. 1 by transmitting at least a part of at least one of a mote-addressed sensing index in order to report sensor id, light, and temperature readings such that these readings make sense in a context of name-value pair (section 3.1 Basic Language Features, Madden Ref. 2) and (section 2 last paragraph, Madden Ref. 1).

As to claim 14, Mulgund in view of Madden Ref. 1 and in further view of Madden Ref. 2 shows all the elements, as discussed per claim 2.

13. Claims 11, 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of "TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks" by Samuel Madden et al. and in further view of Regli et al. (US 2005/0141706 A1).

As to claim 11, Mulgund in view of Madden shows all the elements except for encrypting part of the aggregate of one or more mote-addressed content indexes of the first set of motes utilizing at least one of a private or a public key.

Regli shows encrypting part of the aggregate of one or more mote-addressed content indexes of the first set of motes utilizing at least one of a private or a public key (par. [0056]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund in view of Madden by encrypting part of the aggregate of one or more mote-addressed content indexes of the first set of motes utilizing at least one of a private or a public key in order to support encrypted communication at the network layer between wireless devices (paragraphs [0054]-[0056] in Regli).

As to claim 12, Mulgund in view of Madden shows all the elements except for decoding at least a part of one or more mote-addressed content indexes utilizing at least one of a public key or a private key.

Regli shows decoding traffic on the network layer [decryption of traffic] utilizing at least one of a public key or a private key (paragraph [0064]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund in view of Madden by having at least a part of one or more mote-addressed content indexes (as taught by Mulgund in view of Madden) being decoded utilizing at least one of a public key or a private key (as taught by Regli) in order to support encrypted communication at the network layer between wireless devices (paragraphs [0054]-[0056] and [0064] in Regli).

As to claims 23 and 24, Mulgund in view of Madden and in further view of Regli shows all the elements, as discussed per claim 11 and claim 12 above.

14. Claims 25, 26, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of “TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks” by Samuel Madden et al and in further view of “A Transmission Control Scheme for Media Access in Sensor Networks” by Alec Woo et al.

As to claim 25, Mulgund shows a second mote (Fig. 1 node (2)).

Mulgund does not explicitly show means for transmitting at least a part of an aggregate of one or more mote-addressed content indexes of a first set of motes, the

first set of motes excluding the second mote, and said means for transmitting being disposed proximate to said second mote.

Madden shows means for transmitting at least a part of an aggregate of one or more mote-addressed content indexes of a first set of motes, the first set of motes excluding the second mote, and said means for transmitting being disposed proximate to said mote [a TinyOS that facilitates routing data from child device to a parent device] (section 1 Introduction).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Mulgund by having means for transmitting at least a part of an aggregate of one or more mote-addressed content indexes of a first set of motes, the first set of motes excluding the second mote, and said means for transmitting being disposed proximate to said mote in order to facilitate routing data between devices (Madden, section 1).

In support to the teaching of Madden, Woo shows a complete TinyOS application component graph wherein the sensor component periodically transmits the data toward a base station over the multihop network (section 2.1 Networking Component Stack).

As to claim 26, Mulgund shows at least one mote (Fig. 1 node (2)).

Mulgund does not explicitly show at least one multi-mote reporting entity resident in said at least one mote, said at least one multi-mote reporting entity configured to report at least a part of a multi-mote content index stored in motes other than the at least one mote.

Madden shows at least one multi-mote reporting entity resident in said at least one mote, said at least one multi-mote reporting entity configured to report at least a part of a multi-mote content index stored in motes other than the at least one mote [a TinyOS that facilitates routing data from child device to a parent device] (section 1 Introduction).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Mulgund by having at least one multi-mote reporting entity resident in said at least one mote, said at least one multi-mote reporting entity configured to report at least a part of a multi-mote content index stored in motes other than the at least one mote in order to facilitate routing data between devices (Madden, section 1).

In support to the teaching of Madden, Woo shows a complete TinyOS application component graph wherein the sensor component periodically transmits the data toward a base station over the multihop network (section 2.1 Networking Component Stack).

As to claim 28, Mulgund in view of Madden Ref. 1 shows said at least one multi-mote reporting entity [TinyOS] being configured to transmit at least one of a sensing function, a control function, or a routing/spatial information [TinyOS uses a CSMA-like media access protocol to send and receive messages] (section 1 Introduction; section 2 par. 3 in Madden Ref. 1).

As to claim 29, Mulgund shows at least one of a processor, a memory, or a communications devices formed from a substrate (par. [0026]).

15. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of “TAG: a Tiny Aggregation Service for Ad-Hoc Sensor Networks” by Samuel Madden et al. (hereinafter Madden Ref. 1) in view of “A Transmission Control Scheme for Media Access in Sensor Networks” by Alec Woo et al. and in further view of “The Design of an Acquisitional Query Processor For Sensor Networks” by Samuel Madden et al. (hereinafter Madden Ref. 2).

As to claim 27, Mulgund shows that said multi-mote content index comprises at least one of a sensing function, a control function, or a routing/spatial information of a mote-appropriate device (paragraphs [0037], [0041] in Mulgund).

Alternatively, Madden Ref. 2 shows that said multi-mote content index comprises at least one of a sensing function, a control function, or a routing/spatial information of a mote-appropriate device (under 2.2 Communication in Sensor Networks, paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Mulgund in view of Madden Ref. 1 and further view of Woo by having said multi-mote content index comprise at least one of a sensing function, a control function, or a routing/spatial information of a mote-appropriate device in order to provide mote specific information.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG SURVILLO whose telephone number is (571)272-9691. The examiner can normally be reached on M-Th 8:30am - 6:00pm; F 8:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Oleg Survillo
Phone: 571-272-9691

/Andrew Caldwell/
Supervisory Patent Examiner, Art
Unit 2442